

over Fretwell (US 5 556 250) in view of EP 786 374, Jap. 10 109585 and further in view of Mortensen and Disque (cited in the previous Official Action).

Fretwell (US 5 556 250) discloses a vehicle lift, for example, for wheel chairs, with a horizontal platform pivotally affixed to a laterally spaced-apart parallelogram elevating frame which is in turn pivotally affixed to a carriage which can be moved laterally into a mounting enclosure by means of guide rails.

The mounting enclosure M is said to be mounted to the vehicle V, but it is not shown how the mounting enclosure is mounted since the invention disclosed in this patent is only concerned with the operating mechanism for the lift. It is only mentioned that the enclosure may be bolted to the vehicle V, (column 6, lines 11, 12).

EP 786 374 discloses a fixing unit for a lifting device applicable to the rear of the longitudinal members of a vehicle frame. The lifting mechanism is firmly mounted on the frame of the vehicle or as shown in Fig. 5, it is slidably supported directly on the vehicle frame. This arrangement requires substantial work on the vehicle frame and adaptation of the support structure to the spacing of the vehicle frame members.

Japanese patent publication no. 10 109 585 discloses an adjustable mounting structure whereby the lifting mechanism can be mounted to differently spaced vehicle frame members. The arrangement does not include a sliding unit permitting longitudinal movement of the whole unit below the vehicle.

Mortenson (US 4 078 676) discloses a self-storing lift gate assembly with a loading platform which can be raised and lowered by a parallelogram-type lifting mechanism and which, for storage, can be folded onto the parallelogram type mechanism to be supported thereon. The invention concerns the folding and operating mechanism. It is not concerned with the mounting of the assembly to a vehicle frame or a vehicle loading bed.

Disque (US 4 579 503) discloses a side loader elevator platform specifically designed to serve a cargo opening in the side wall of a truck body. It includes a carriage assembly that is slidable along rails mounted beneath a truck body's bed transverse to the longitudinal vehicle axis. The carriage assembly includes hydraulic rams operating parallelogram linkages for raising and lowering the elevator platform. A roller chain drive system is provided for moving the carriage assembly and platform on rails between a storage position below the truck body's

bed and an elevator for lowering and raising the platform when it is extended outward beyond the truck body's side wall. Locking means are provided for securing the carriage assembly in the extended position or in the storage position.

The present invention, in contrast, is concerned with the mounting of a loading platform system slide unit to different vehicle frames that is frames having differently spaced longitudinal frame members. It includes a platform support arrangement including two parallel spaced beams, a loading platform for lifting and lowering a load, a lift actuating device for lifting and lowering the loading platform, all combined in a slide unit, which is movable back and forth in the longitudinal direction of the vehicle. Transverse members are provided which are adapted to a particular vehicle support frame, that is, to different support beam spacings so that the lifting mechanism itself does not need to be adjusted to the different spacing of the frames of different vehicles.

With this arrangement, only the transverse members have to be adapted to differently spaced frames of different vehicles or transverse members of different lengths are to be selected. The lifting structure as such that is the slide unit with the operating mechanism of the platform remain unaffected. This greatly facilitates the installation of the loading platform system and reduces installation expenses.

The references do not show such an arrangement and it is asserted that the arrangement is not obvious from the cited references:

Concerning the rejection of claim 1, it is pointed out that Fretwell (5 556 250) does not disclose how exactly the vehicle lift, shown therein is mounted to the vehicle body or frame. It is quite clear however, that it is not mounted to the vehicle frame by the cross member 144 as alleged by the Examiner. The arrangement is simply not concerned with that aspect.

EP 786 374 discloses a structure for mounting a lifting device to the longitudinal members of a vehicle frame wherein a beam 3 which supports the linkages and the actuators of the lifting device, is adjustably supported by, that is, mounted to, the longitudinal vehicle frame member. No slide unit is involved so that the reference is not really pertinent.

Jap. Patent publication 10 109585 discloses in Fig. 2 the mounting of a transverse beam on which the lift mechanism is mounted to the longitudinal frame members of a vehicle

in an adjustable manner so that it can be fitted to vehicles with different frame member spacing. Again, no sliding unit is involved which permits the movement of the lift arrangement below the vehicle so that the reference is actually not applicable to the present situation.

Clearly, a combination of the three references will not lead to the loading platform system as defined in claim 1 of the present application.

Fretwell shows a slide unit. EP 786 374 suggest a slidable mounting directly on the longitudinal vehicle frame members of the transverse frame structure which supports the lifting mechanism. However such a solution is not considered to be desirable since it would require preparation of the vehicle frame that is work which can not be performed before installation of the unit in the factory. And Jap. 10 109585 does not really add anything but a particular way of how to mount a transverse member to the longitudinal frame members such that the longitudinal frame members can be differently spaced.

The combination of the references would clearly not lead to the loading platform system according to the invention on a vehicle support frame by way of transverse members which bridge the distance between two spaced frame members of the vehicle support frame. Substantial modifications would be necessary, which are not suggested by the references.

In this connection, the Examiner's attention is directed to decisions wherein it has been determined that

“ Contrary to the position taken by the Examiner in determining the patentability of an invention, it should be recognized that the fact that the prior art could be modified in an Examiner's view so as to result in the combination defined by the claims at bar would not have made the modification obvious unless the prior art suggests the desirability of the modification.” See In re Deminski, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986).

Furthermore, In re Laskowski, CAFC, No. 88-1349, decided April 3, 1989, concerning an invention utilizing, for the support of a saw band, a loose tire rather than a tightly fitted tire, the Court stated that, although the Commissioner suggests that Hoffman (the cited prior art utilizing a tightly fitted tire) could readily be modified to form the Laskowski structure (with loosely fitted tire), the mere fact that the prior art could be so modified would not have

made the modification obvious unless the prior art suggested the desirability of the modification.

Reconsideration of the rejection of claim 1 as being obvious from Fretwell, EP 7 866 374 and Jap. 10 109585 is respectfully requested.

Claims 3 and 4 define particular mounting arrangements of the slide unit. They are dependent on claim 1 and consequently includes all the features of claim 1 so that it should be patentable together with claim 1.

Claim 6 defines that the transverse member is so mounted on the slide unit that the slide unit is movable in the longitudinal direction with respect to the support frame when a force is effective on the slide unit which exceeds a predetermined amount so as to avoid damage to the slide unit during a rear-ending accident.

Claim 7 relates to a particular embodiment of the arrangement as defined in claim 6.

No such concept of supporting the slide unit in such a way that it can yield during a rear-ending accident is apparent from or even suggest in any of the references so that these claims cannot possibly be considered obvious from the cited references. Reconsideration of the rejection of these claims is respectfully requested.

Concerning claims 8 – 24 which are considered by the Examiner to be obvious from the above references in combination with Mortensen and Disque, it is noted that all of these claims are directly or indirectly dependent on claim 1 and therefore include all the features of claim 1 so that they ought to be considered to be patentable already for that reason. Besides, claims 12 to 17 define that the slide unit includes stops which limit the movement of the slide elements (claim 12) and the stops have holes and the slide element have support pins which are received in the holes and engaged therein where the slide element is moved to its outward end position so that the torques effective when the platform is loaded are not transmitted to the slide structure of the slide unit but is transferred directly to structural members (claim 13). Preferably, the holes and the support pins are conical to provide for a snug fit (claim 14).

Also, the stops are adjustable in the longitudinal direction so as to insure a proper fit of the conical pins in the conical holes (claim 15).

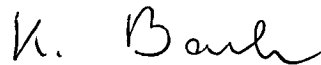
Still further, the stops which limit inward movement of the slide unit are designed so as to be deformed non-elastically when subjected to a force above a predetermined threshold in

the longitudinal vehicle direction in order to prevent damage to the unit during a rear-ending accident (claims 16, 17).

No such concept is disclosed in nor in any way suggested by the cited reference so that the subject matter covered by claims 12 to 17 should clearly be patentable.

Again, claims 18 to 24 relate to particular arrangements considered to be advantageous in connection with the subject matter as defined in claim 1 on which they are all directly or indirectly dependent. Reconsideration of the dependent claims 6 – 24 and allowance of claims 1, 3, 4, and 6 – 24 is solicited.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "K. Bach".

Klaus J. Bach, Reg. No. 26832

MARKUP COPY TO SHOW CHANGES MADE

The specification has been amended as follows:

In the Specification:

Page 12, first paragraph:

The loading platform system 10 comprises at least one support arrangement consisting of two spaced essentially parallel support structures 13, 14. It furthermore comprises an essentially plate-like loading platform 15 for lifting and lowering a load, the loading platform 15 shown herein being a so-called fold away loading platform which can be folded together to half its length in the longitudinal direction of the vehicle, see arrow 112. In addition, a lift actuator structure 16 for the lifting and lowering of the loading platform 15 is provided. There may also be provided a tilt actuator structure 17 for tilting the loading platform for example from a horizontal to a vertical position. This may be provided for certain embodiments of the loading platform system 10 or for the purpose of slightly tilting the tip of the loading platform 15 when it is lowered onto the street surface 115 (Fig 14). If the tip of the loading platforms is disposed on the load surface 115, there is no threshold. This [which] facilitates the movement of loads onto the loading platform 15 or the removal therefrom. Finally, the loading platform system comprises a slide unit 18, which is back and forth movable in the longitudinal direction 112 of the vehicle, see again arrow 112, on which slide unit 18 at least the support arrangement 12, the loading platform 15 and the lift actuator mechanism 16 and, if present, also the tilt actuator mechanism 17 [is] are mounted.

Page 12, second paragraph extending to page 13:

In the embodiment of the loading platform system 10 as shown in the figures the slide unit 18 is supported by two transverse members 19, 20, which extend essentially at a right angle with respect to the longitudinal direction of the guide elements 30, 31 [that is] . The slide unit 18 is mounted to the transverse members 19, 20 by way of the legs 27, 28 and the [transverse member or respectively, the] elongated holes 29 (Fig. 2) formed therein by means of a bolt-nut connection which is not shown. At the ends 21, 22 of the transverse members 19, 20, there are end elements 23, 24. The end elements 23, 24 have a predetermined number of holes by way of which the transverse members 19, 20 and, consequently, the slide unit 18 is mounted between the two frame members 110, 111 (Fig. 9) of a vehicle for example by means of bolt and nut connections, which provide for easy mounting of the loading platform system 10 to a vehicle 11, see Figs. 6, 8 and 9.

Page 13, second full paragraph:

As shown in Fig. 2, Fig. 3, slide elements 32, 33 are received and guided in the guide elements 30, 31 so as to be longitudinally movable in the guide elements [32, 33] 30, 31, which are, at the same time, support frame members.

Page 14, second paragraph:

The guide elements 30, 31 are provided with stops 45, 46 (Fig. 4) which limit the extension movement of the slide elements 32, 33 and, accordingly of the whole slide unit 18 in the slide-out direction 113 - see Fig. 1. The stops 45, 46, which essentially extend into the slide path of the slide elements 32, 33 in the guide elements 30, 31 include [a hole]

holes 450, 460 oriented in the longitudinal direction 112 of the vehicle. The slide elements 32 on the other hand are provided with support pins 322, 332 (Figs. 5a, 5b) having an axis extending essentially on the longitudinal vehicle direction 112. With maximum outward movement in the outward direction 113, the support pins 322, 332 extend into the respective holes 450, 460 and the support pins 322, 332 are conical in the direction of their axes that is in their longitudinal cross-sections so that a force- and form- locking connection between the support pins 322, 332 and the holes 450, 460 is established when the slide unit 18 is in its outward end position in the outward direction [118] 113. Then the forces effective on the loading platform 15 during normal operation of the loading platform system 10 are transferred, by way of the support structures 13, 14 and the slide elements 32, 33, directly to the support frame members 110, 111 forming the chassis of the vehicle 11. The slide unit, that is, essentially the guide elements 30, 31 is, or are, essentially not exposed to the torques, to which they would be subjected if the stops 45, 46 and the support pins would not be provided.

Page 15, second full paragraph:

The two support structures 13, 14, see [Figs. 4] Fig. 7, are interconnectable by means of a transverse beam 35. For this purpose, the transverse beam 35 is provided at its opposite ends 36, 37 with flange webs 38, 39. With these flange webs 38, 39, which are connected to the transverse beam 35 by way of reinforcement members 43, 44, for example by welds, the transverse beam 35 is connected to the two support structures 13, 14 for example by bolt and nut connections. The transverse beam 35 provides for a rigid interconnection between the two support structures 13, 14, whereby an accurate parallel movement of the two support structures 13, 14 is achieved. It

also provides a good protection against rear-ending as the transverse beam is so designed that it extends beyond the ends 130, 140 of the support structures 13, 14 remote from the slide unit 18, see Fig. [5] 6.

Page 15, third paragraph

There are provided furthermore end stops 47, 48 (Figs. 4, 14), which limit the inward movement of the slide unit in inward direction of movement 114, see Fig. 1. The end stops 47, 48 are again engaged by the slide elements 32, 33, see Fig. 14. The end stops 47, 48 can be formed by an integral tubular element and extend over the two guide elements 30, 31.

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In the ABSTRACT OF THE DISCLOSURE:

[LOADING PLATFORM SYSTEM WITH SLIDE UNIT]

[SUMMARY]

ABSTRACT OF THE DISCLOSURE

(In connection with Fig. 1)

[A] In a loading platform system [(10)] for mounting on vehicles [(11)], particularly trucks, [is proposed] comprising at least one lift support arrangement [(12)] consisting of two essentially parallel spaced support structures [(13, 14)], an essentially plate-like loading platform [(15)] for lifting and lowering a load, at least one lift actuator [(16)] for lifting and lowering the loading platform [(15)] and a slide unit [(18)], which is movable back and forth in the longitudinal direction [(112)] of the vehicle and mountable on the vehicle [(11)] and on which [the] at least the lift support arrange-

ment [(12)], the loading platform [(15)] and [at least] the lift actuator [(16)] are mounted. The slide unit [(18)] is adapted to be mounted on the support frame [(110, 111)] of the vehicle [(11)] by transverse frame members, which are fitted to the spacing of the vehicle support frame members and include means at their ends for mounting them to the vehicle support frame members.